ABSTRACT

A projection optical system projects an image of a first surface onto a second surface, and has a lens component formed of fluorite and a lens component formed of silica, and further includes: a first lens group including at least one lens component formed of fluorite and having a positive refractive power; a second lens group which is arranged in an optical path between the first lens group and the second surface and which has a negative refractive power; and a third lens group which is arranged in an optical path between the second lens group and the second surface and having a positive refractive power; wherein when the number of the lens components formed of silica is Snum, the number of the lens components formed of fluorite is Cnum, and a numerical aperture of the second surface side of the projection optical system is NA, the following conditions are satisfied:

Snum>Cnum (1)

NA>0.75 (2).